Design Patterns in Python

Iterator Design Pattern

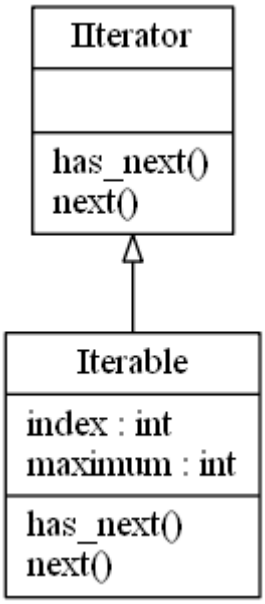
Description

An interface with **next** and **has_next** methods.

next returns the next object in the aggregate(collection, list)

has_next returns a value, usually a boolean indicating if the iterable is at the end of the list or not.

The benefits of using the Iterator pattern is that the client, can traverse an aggregate without needing to understand it's internal representation and data structures.



Source Code

iterator.py

```
from abc import ABCMeta, abstractmethod

class IIterator(metaclass=ABCMeta):
    @staticmethod
    @abstractmethod
    def has_next():
        """Returns Boolean whether at end of collection or not"""

    @staticmethod
    @abstractmethod
    def next():
        """Return the object in collection"""

class Iterable(IIterator):
    def __init__(self):
        self.index = 0
```

```
        self.maximum = 7

    def next(self):
        if self.index < self.maximum:
            x = self.index
            self.index += 1
            return x
        else:
            raise Exception("AtEndOfIteratorException", "At End of Iterator")

    def has_next(self):
        return self.index < self.maximum

ITERABLE = Iterable()

while ITERABLE.has_next():
    print(ITERABLE.next())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